

SEQUENCE LISTING

(1) GENERAL INFORMATION

(i) APPLICANTS: DEAN L. ENGELHARDT
STAVRIANOPOULOS, JANNIS G.
DONEGAN, JAMES J.
RABBANI, ELAZAR

(ii) TITLE OF INVENTION: NOVEL PROCESS, CONSTRUCT AND
CONJUGATE FOR PRODUCING MULTIPLE NUCLEIC ACID COPIES

(iii) NUMBER OF SEQUENCES: 21

(iv) CORRESPONDENCE ADDRESS:

(A) ADDRESSEE: ENZO DIAGNOSTICS, INC.
(B) STREET: C/O ENZO BIOCHEM, INC.
575 FIFTH AVENUE, 18TH FLOOR
(C) CITY: NEW YORK
(D) STATE: NY
(E) COUNTRY: USA
(F) ZIP: 10017

(v) COMPUTER READABLE FORM:

(A) MEDIUM TYPE: 3.5" Micro Floppy Disk. 1.44 KB
STORAGE
(B) COMPUTER: IBM PC/XT/AT, IBM PS/2 OR COMPATIBLES
(C) OPERATING SYSTEM: PC-DOS
(D) SOFTWARE: WORD PERFECT 5.1/5.2 - ASCII TEXT (DOS)

(vi) CURRENT APPLICATION DATA:

(A) APPLICATION NUMBER: US 08/182,621
(B) FILING DATE: 13-JANUARY-1994
(C) CLASSIFICATION: Not Yet Known

(viii) ATTORNEY/AGENT INFORMATION:

(A) NAME: FEDUS, RONALD C.
(B) REGISTRATION NUMBER: 32,567
(C) REFERENCE/DOCKET NUMBER: ENZ-52

(ix) TELECOMMUNICATION INFORMATION

(A) TELEPHONE: (212) 856-0876
(B) TELEFAX: (212) 856-0878

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:

(2) INFORMATION FOR SEQ ID NO: 1:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 7250 base pairs
(B) TYPE: nucleic acid

SEQ ID NO: 1, PAGE 2

(C) STRANDEDNESS: double
(D) TOPOLOGY: circular
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:

AATGCTACTA	CTATTAGTAG	AATTGATGCC	ACCTTTTCAG	CTCGCGCCCC	1
AAATGAAAAT	ATAGCTAAAC	AGGTATTGA	CCATTGCGA	AATGTATCTA	51
ATGGTCAAAC	TAAATCTACT	CGTTCGCAGA	ATTGGGAATC	AACTGTTACA	101
TGGAATGAAA	CTTCCAGACA	CCGTACTTTA	GTTGCATATT	TAAAACATGT	151
TGAGCTACAG	CACCAGATTC	AGCAATTAAG	CTCTAAGCCA	TCCGCAAAAA	201
TGACCTCTTA	TCAAAGGAG	CAATTAAAGG	TACTCTCTAA	TCCTGACCTG	251
TTGGAGTTTG	CTTCCGGTCT	GGTTCGCTTT	GAAGCTCGAA	TTAAAACGCG	301
ATATTTGAAG	TCTTTCGGGC	TTCCTCTTAA	TCTTTTGTAT	GCAATCCGCT	351
TTGCTTCTGA	CTATAATAGT	CAGGGTAAAG	ACCTGATTTT	TGATTTATGG	401
TCATTCTCGT	TTTCTGAACT	GTTTAAAGCA	TTTGAGGGGG	ATTCAATGAA	451
TATTTATGAC	GATTC CGCAG	TATTGGACGC	TATCCAGTCT	AAACATTTTA	501
CTATTACCCC	CTCTGGCAAA	ACTTCTTTTG	CAAAGCCTC	TCGCTATTTT	551
GGTTTTTATC	GTCGTCTGGT	AAACGAGGGT	TATGATAGTG	TTGCTCTTAC	601
TATGCCTCGT	AATTCCTTTT	GGCGTTATGT	ATCTGCATTA	GTTGAATGTG	651
GTATTCCTAA	ATCTCAACTG	ATGAATCTTT	CTACCTGTAA	TAATGTTGTT	701
CCGTTAGTTC	GTTTTATTAA	CGTAGATTTT	TCTTCCCAAC	GTCCTGACTG	751
GTATAATGAG	CCAGTTCTTA	AAATCGCATA	AGGTAATTCA	CAATGATTAA	801
AGTTGAAATT	AAACCATCTC	AAGCCCAATT	TACTACTCGT	TCTGGTGTTT	851
TCGTCAGGGC	AAGCTTATT	CACTGAATGA	GCAGCTTTGT	TACGTTGATT	901
TGGGTAATGA	ATATCCGGTT	CTTGTCGAAG	ATTACTCTTG	ATGAAGGTCA	951
GCCAGCCTAT	GCGCCTGGTC	TGTACACCGT	TCATCTGTCC	TCTTTCAAAG	1001
TTGGTCAGTT	CGGTTCCCTT	ATGATTGACC	GTCTGCGCCT	CGTTC CGGCT	1051

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AAGTAACATG	GAGCAGGTCG	CGGATTTCGA	CACAATTTAT	CAGGCGATGA	1101
TACAAATCTC	CGTTGTACCTT	TGTTTCGCGC	TTGGTATAAT	CGCTGGGGGT	1151
CAAAGATGAG	TGTTTTAGTG	TATTCTTTCG	CCTCTTTCGT	TTTAGGTTGG	1201
TGCCTTCGTA	GTGGCATTAC	GTATTTTACC	CGTTTAATGG	AAACTTCCTC	1251
ATGAAAAAGT	CTTTAGTCCT	CAAAGCCTCT	GTAGCCGTTG	CTACCCTCGT	1301
TCCGATGCTG	TCTTTCGCTG	CTGAGGGTGA	CGATCCCGCA	AAAGCGGCCT	1351
TTAACTCCCT	GCAAGCCTCA	GCGACCGAAT	ATATCGGTTA	TGCGTGGGCG	1401
ATGGTTGTTG	TCATTGTCGG	CGCAACTATC	GGTATCAAGC	TGTTTAAGAA	1451
ATTCACCTCG	AAAGCAAGCT	GATAAACCGA	TACAATTAAA	GGCTCCTTTT	1501
GGAGCCTTTT	TTTTTGGAGA	TTTTCAACGT	GAAAAAATTA	TTATTCGCAA	1551
TTCCTTTAGT	TGTTCTTTC	TATTCTCACT	CCGCTGAAAC	TGTTGAAAGT	1601
TGTTTAGCAA	AACCCCATAC	AGAAAATTCA	TTTACTAACG	TCTGGAAAGA	1651
CGACAAAAC	TTAGATCGTT	ACGCTAACTA	TGAGGGTTGT	CTGTGGAATG	1701
CTACAGGCGT	TGTAGTTTGT	ACTGGTGACG	AAACTCAGTG	TTACGGTACA	1751
TGGGTTCCCTA	TTGGGCTTGC	TATCCCTGAA	AATGAGGGTG	GTGGCTCTGA	1801
GGGTGGCGGT	TCTGAGGGTG	GCGGTTCTGA	GGGTGGCGGT	ACTAAACCTC	1851
CTGAGTACGG	TGATACACCT	ATTCCGGGCT	ATACTTATAT	CAACCCTCTC	1901
GACGGCACTT	ATCCGCCTGG	TACTGAGCAA	AACCCGCTA	ATCCTAATCC	1951
TTCTCTTGAG	GAGTCTCAGC	CTCTTAATAC	TTTCATGTTT	CAGAATAATA	2001
GGTTCCGAAA	TAGGCAGGGG	GCATTAAC	TTTATACGGC	CACTGTTACT	2051
CAAGGCACTG	ACCCCGTTAA	AACTTATTAC	CAGTACACTC	CTGTATCATC	2101
AAAAGCCATG	TATGACGCTT	ACTGGAACGG	TAAATTCAGA	GACTGCGCTT	2151
CAAGGCACTG	ACCCCGTTAA	AACTTATTAC	CAGTACACTC	CTGTATCATC	2201
AAAAGCCATG	TGCCTCAACC	TCCTGTCAAT	GCTGGCGGCG	GCTCTGGTGG	2151

TCCATTCTGG	CTTTAATCAA	GATCCATTCG	TTTGTGAATA	TCAAGGCCAA	2201
TCGTCTGACC	TGCCTCAACC	TCCTGTCAAT	GCTGGCGGCG	GCTCTGGTGG	2251
TGGTTCTGGT	GGCGGCTCTG	AGGGTGGTGG	CTCTGAGGGT	GGCGGTTCTG	2301
AGGGTGGCGG	CTCTGAGGGA	GGCGGTTCCG	GTGGTGGCTC	TGGTTCCGGT	2351
GATTTTGATT	ATGAAAAGAT	GGCAAACGCT	AATAAGGGGG	CTATGACCGA	2401
AAATGCCGAT	GAAAACGCGC	TACAGTCTGA	CGCTAAAGGC	AAACTTGATT	2451
CTGTCGCTAC	TGATTACGGT	GCTGCTATCG	ATGGTTTCAT	TGGTGACGTT	2501
TCCGGCCTTG	CTAATGGTAA	TGGTGCTACT	GGTGATTTTG	CTGGCTCTAA	2551
TTCCCAAATG	GCTCAAGTCG	GTGACGGTGA	TAATTCACCT	TTAATGAATA	2601
ATTTCCGTCA	ATATTTACCT	TCCCTCCCTC	AATCGGTTGA	ATGTCGCCCT	2651
TTTGTCTTTA	GCGCTGGTAA	ACCATATGAA	TTTTCTATTG	ATTGTGACAA	2701
AATAAACTTA	TTCCGTGGTG	TCTTTGCGTT	TCTTTTATAT	GTTGCCACCT	2751
TTATGTATGT	ATTTTCTACG	TTTGCTAACA	TACTGCGTAA	TAAGGAGTCT	2801
TTATCATGCC	AGTTCTTTTG	GGTATTCCGT	TATTATTGCG	TTTCCTCGGT	2851
TTCTTCTGG	TAACTTTGTT	CGGCTATCTG	CTTACTTTTC	TTAAAAAGGG	2901
CTTCGTAAG	ATAGCTATTG	CTATTTCAAT	GTTTCTTGCT	CTTATTATTG	2951
GGCTTAACTC	AATTCCTGTG	GGTTATCTCT	CTGATATTAG	CGCTCAATTA	3001
CCCTCTGACT	TTGTTCAAGG	TGTTCAAGTA	ATTCTCCCGT	CTAATGCGCT	3051
TCCCTGTTTT	TATGTTATTC	TCTCTGTAAA	GGCTGCTATT	TTCATTTTTG	3101
ACGTTAAACA	AAAAATCGTT	TCTTATTTGG	ATTGGGATAA	ATAATATGGC	3151
TGTTTATTTT	GTAAGTGGCA	AATTAGGCTC	TGGAAAGACG	CTCGTTAGCG	3201
TTGGTAAGAT	TCAGGATAAA	ATTGTAGCTG	GGTGCAAAAT	AGCAACTAAT	3251
CTTGATTTAA	GGCTTCAAAA	CCTCCCGCAA	GTCGGGAGGT	TCGCTAAAAC	3301
GCCTCGCGTT	CTTAGAATAC	CGGATAAGCC	TTCTATATCT	GATTTGCTTG	3351

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CTATTGGGCG	CGGTAATGAT	TCCTACGAATG	AAAATAAAAA	CGGCTTGCTT	3401
GTTCTCGATG	AGTGCGGTAC	TTGGTTTAAT	ACCCGTTCTT	GGAATGATAA	3451
GGAAAGACAG	CCGATTATTG	ATTGGTTTCT	ACTGCTCGT	AAATTAGGAT	3501
GGGATATTAT	TTTTCTTGTT	CAGGACTTAT	CTATTGTTGA	TAAACAGGCG	3551
CGTTCTGCAT	TAGCTGAACA	TGTTGTTTAT	TGTCGTCGTC	TGGACAGAAT	3601
TACTTTACCT	TTTGTCGGTA	CTTTATATTC	TCTTATTACT	GGCTCGAAAA	3651
TGCCTCTGCC	TAAATTACAT	GTTGGCGTTG	TTAAATATGG	CGATTCTCAA	3701
TTAAGCCCTA	CTGTTGAGCG	TTGGCTTTAT	ACTGGTAAGA	ATTTGTATAA	3751
CGCATATGAT	ACTAAACAGG	CTTTTTCTAG	TAATTATGAT	TCCGGTGTTT	3801
ATTCTTATTT	AACGCCTTAT	TTATCACACG	GTCGGTATTT	CAAACCATTA	3851
AATTTAGGTC	AGAAGATGAA	ATTA ACTAAA	ATAATATTGA	AAAAGTTTTC	3901
TCGCGTTCTT	TGTCTTGCGA	TTGGATTTGC	ATCAGCATTT	ACATATAGTT	3951
ATATAACCCA	ACCTAAGCCG	GAGGTTAAAA	AGGTAGTCTC	TCAGACCTAT	4001
GATTTTGATA	AATTC ACTAT	TGACTCTTCT	CAGCGTCTTA	ATCTAAGCTA	4051
TCGCTATGTT	TTCAAGGATT	CTAAGGGAAA	ATTAATTAAT	AGCGACGATT	4101
TACAGAAGCA	AGGTTATTCA	CTCACATATA	TTGATTTATG	TACTGTTTCC	4151
ATTAAAAAAG	GTAATTCAAA	TGAAATTGTT	AAATGTAATT	AATTTTGTTT	4201
TCTTGATGTT	TGTTTCATCA	TCTTCTTTTG	CTCAGGTAAT	TGAAATGAAT	4251
AATTCGCCTC	TGCGCGATTT	TGTA ACTTGG	TATTCAAAGC	AATCAGGCGA	4301
AATCCGTTATT	GTTTCTCCCG	ATGTAAAAGG	TACTGTTACT	GTATATTCAT	4351
CTGACGTTAA	ACCTGAAAAT	CTACGCAATT	TCTTTATTTT	TGTTTTACGT	4401
GCTAATAATT	TTGATAATGGT	TGGTTCAATT	CCTTCCATAA	TTCAGAAGTA	4451
TAATCCAAAC	AATCAGGATT	ATATTGATGA	ATTGCCATCA	TCTGATAATC	4501
AGGAATATGA	TGATAATTCC	GCTCCTTCTG	GTGGTTTCTT	TGTTCCGCAA	4551

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AATGATAATG	TTACTCAAAC	TTTTAAAATT	AATAACG TTC	GGGCAAAGGA	4601
TTTAATACGA	GTTGTCGAAT	TGTTTGTAAA	GTCTAATACT	TCTAAATCCT	4651
CAAATGTATT	ATCTATTGAC	GGCTCTAATC	TATTAGTTGT	TAGTGCTCCT	4701
AAAGATATTT	TAGATAACCT	TCCTCAATTC	CTTTCTACTG	TTGATTTGCC	4751
AACTGACCAG	ATATTGATTG	AGGGTTTGAT	ATTTGAGGTT	CAGCAAGGTG	4801
ATGCTTTAGA	TTTTTCATTT	GCTGCTGGCT	CTCAGCGTGG	CACTGTTGCA	4851
GGCGGTGTTA	ATACTGACCG	CCTCACCTCT	GTTTTATCTT	CTGCTGGTGG	4901
TTCGTTCCGT	ATTTTAAATG	GCGATGTTTT	AGGGCTATCA	GTTGCGGCAT	4951
TAAAGACTAA	TAGCCATTCA	AAAATATTGT	CTGTGCCACG	TATTCTTACG	5001
CTTTCAGGTC	AGAAGGGTTC	TATCTCTGTT	GGCCAGAATG	TCCCTTTTAT	5051
TAAAGACTAA	TAGCCATTCA	AAAATATTGT	CTGTGCCACG	TATTCTTACG	5101
CGATTGAGCG	TCAAAATGTA	GGTATTTCCA	TGAGCGTTTT	TCCTGTTGCA	5151
ATGGCTGGCG	GTAATATTGT	TCTGGATATT	ACCAGCAAGG	CCGATAGTTT	5201
GAGTTCTCT	ACTCAGGCAA	GTGATGTTAT	TACTAATCAA	AGAAGTATTG	5251
CTACAACGGT	TAATTTGCGT	GATGGACAGA	CTCTTTTACT	CGGTGGCCTC	5301
ACTGATTATA	AAAACACTTC	TCAAGATTCT	GGCGTACCGT	TCCTGTCTAA	5351
AATCCCTTTA	ATCGGCCTCC	TGTTTAGCTC	CCGCTCTGAT	TCCAACGAGG	5401
AAAGCACGTT	ATACGTGCTC	GTCAAAGCAA	CCATAGTACG	CGCCCTGTAG	5451
CGGCGCATTA	AGCGCGGCGG	GTGTGGTGGT	TACGCGCAGC	GTGACCGCTA	5501
CACTTGCCAG	CGCCCTAGCG	CCCGCTCCTT	TCGCTTTCTT	CCCTTCCTTT	5551
CTCGCCACGT	TCGCCGGCTT	TCCCCGTCAA	GCTCTAAATC	GGGGGCTCCC	5601
TTTAGGGTTC	CGATTTAGTG	CTTTACGGCA	CCTCGACCCC	AAAAAACTTG	5651
ATTTGGGTGA	TGGTTCACGT	AGTGGGCCAT	CGCCCTGATA	GACGGTTTTT	5701
CGCCCTTTGA	CGTTGGAGTC	CACGTTCTTT	AATAGTGGAC	TCTTGTTCCA	5751

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AACTGGAACA	ACACTCAACC	CTATCTCGGG	CTATTCTTTT	GATTTATAAG	5801
GGATTTTGCC	GATTTTCGGAA	CCACCATCAA	ACAGGATTTT	CGCCTGCTGG	5851
GGCAAACCAG	CGTGGACCGC	TTGCTGCAAC	TCTCTCAGGG	CCAGGCGGTG	5901
AAGGGCAATC	AGCTGTTGCC	CGTCTCGCTG	GTGAAAAGAA	AAACCACCCT	5951
GGCGCCCAAT	ACGCAAACCG	CCTCTCCCCG	CGCGTTGGCC	GATTCATTAA	6001
TGCAGCTGGC	ACGACAGGTT	TCCCGACTGG	AAAGCGGGCA	GTGAGCGCAA	6051
CGCAATTAAT	GTGAGTTAGC	TCACTCATTA	GGCACCCCAG	GCTTTTACACT	6101
TTATGCTTCC	GGCTCGTATG	TTGTGTGGAA	TTGTGAGCGG	ATAACAATTT	6151
CACACAGGAA	ACAGCTATGA	CCATGATTAC	GAATTCGAGC	TCGGTACCCG	6201
GCGATCCTCT	AGAGTCGACC	TGCAGGCATG	CAAGCTTGGC	ACTGGCCGTC	6251
GTTTTACAAC	GTCGTGACTG	GGAAAACCCT	GGCGTTACCC	AACTTAATCG	6301
CCTTGCAGCA	CAATCCCCTT	TCGCCAGCTG	GCGTAATAGC	GAAGAGGCCC	6351
GCACCGATCG	CCCTTCCCAA	CAGTTGCGCA	GCCTGAATGG	CGAATGGCGC	6401
TTTGCCTGGT	TTCCGGCACC	AGAAGCGGTG	CCGGAAGCT	GGCTGGAGTG	6451
CGATCTTCCT	GAGGCCGATA	CGGTCGTCGT	CCCCTCAAAC	TGGCAGATGC	6501
ACGGTTACGA	TGCGCCCATC	TACACCAACG	TAACCTATCC	CATTACGGTC	6551
AATCCGCCGT	TTGTTCCAC	GGAGAATCCG	ACGGGTGTT	ACTCGCTCAC	6601
ATTTAATGTT	GATGAAAGCT	GGCTACAGGA	AGGCCAGACG	CGAATTATTT	6651
TTGATGGCGT	TCCTATTGGT	TAAAAAATGA	GCTGATTTAA	CAAAAATTTA	6701
ACGCGAATTT	TAACAAAATA	TTAACGTTTA	CAATTTAAAT	ATTTGCTTAT	6751
ACAATCTTCC	TGTTTTTGGG	GCTTTTCTGA	TTATCAACCG	GGGTACATAT	6801
GATTGACATG	CTAGTTTTAC	GATTACCGTT	CATCGATTCT	CTTGTTTGCT	6851
CCAGACTCTC	AGGCAATGAC	CTGATAGCCT	TTGTAGATCT	CTCAAAAATA	6901
GCTACCCTCT	CCGGCATGAA	TTTATCAGCT	AGAACGGTTG	AATATCATAT	6951

SEQ ID NO: 1, PAGE 8

TGATGGTGAT	TTGACTGTCT	CCGGCCTTTC	TCACCCTTTT	GAATCTTTAC	7001
CTACACATTA	CTCAGGCATT	GCATTTAAAA	TATATGAGGG	TTCTAAAAAT	7051
TTTTATCCTT	GCGTTGAAAT	AAAGGCTTCT	CCCGCAAAG	TATTACAGGG	7101
TCATAATGTT	TTTGGTACAA	CCGATTTAGC	TTTATGCTCT	GAGGCTTTAT	7151

SEQ ID NO: 1, PAGE 9

(3) INFORMATION FOR SEQ ID NO: 2:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:

AGCAACACTATCATA

SEQ ID NO: 1, PAGE 10

(4) INFORMATION FOR SEQ ID NO: 3:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:

ACGACGATAAAAACC

SEQ ID NO: 1, PAGE 11

(5) INFORMATION FOR SEQ ID NO: 4:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:

TTTTGCAAAAGAAGT

SEQ ID NO: 1, PAGE 12

(6) INFORMATION FOR SEQ ID NO: 5:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:

AATAGTAAAATGTTT

SEQ ID NO: 1, PAGE 13

(7) INFORMATION FOR SEQ ID NO: 6:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:

CAATACTGCGGAATG

SEQ ID NO: 1, PAGE 14

(8) INFORMATION FOR SEQ ID NO: 7:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:

TGAATCCCCCTCAAA

SEQ ID NO: 1, PAGE 15

(9) INFORMATION FOR SEQ ID NO: 8:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:

AGAAAACGAGAATGA

SEQ ID NO: 1, PAGE 16

(10) INFORMATION FOR SEQ ID NO: 9:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:

CAGGTCTTTACCCTG

SEQ ID NO: 1, PAGE 17

(11) INFORMATION FOR SEQ ID NO: 10:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:

AGGAAAGCGGATTGC

SEQ ID NO: 1, PAGE 18

(12) INFORMATION FOR SEQ ID NO: 11:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:

AGGAAGCCCGAAAGA

SEQ ID NO: 1, PAGE 19

(13) INFORMATION FOR SEQ ID NO: 12:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:

ATATTTGAAGTCTTT

SEQ ID NO: 1, PAGE 20

(14) INFORMATION FOR SEQ ID NO: 13:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:

TCTTTTTTGATGCAAT

SEQ ID NO: 1, PAGE 21

(15) INFORMATION FOR SEQ ID NO: 14:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 14:

CTATAATACTCAGGG

SEQ ID NO: 1, PAGE 22

(16) INFORMATION FOR SEQ ID NO: 15:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 15:

TGATTTATGGTCATT

SEQ ID NO: 1, PAGE 23

(17) INFORMATION FOR SEQ ID NO: 16:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 16:

GTTTAAAGCATTTGA

SEQ ID NO: 1, PAGE 24

(18) INFORMATION FOR SEQ ID NO: 17:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 17:

TATTTATGACGATTC

SEQ ID NO: 1, PAGE 25

(19) INFORMATION FOR SEQ ID NO: 18:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 18:

TATCCAGTCTAAACA

SEQ ID NO: 1, PAGE 26

(20) INFORMATION FOR SEQ ID NO: 19:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 19:

CTCTGGCAAACTTC

SEQ ID NO: 1, PAGE 27

(21) INFORMATION FOR SEQ ID NO: 20

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 20

TCGCTATTTTGGTTT

SEQ ID NO: 1, PAGE 28

(22) INFORMATION FOR SEQ ID NO: 21

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 21

AAACGAGGGTTATGA

NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS CONTAINING NUCLEOTIDE SEQUENCE AND/OR AMINO ACID SEQUENCE DISCLOSURES

The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 CFR 1.821 - 1.825 for the following reason(s):

- ☒ 1. This application clearly fails to comply with the requirements of 37 CFR 1.821 - 1.825. Applicant's attention is directed to these regulations, published at 1114 OG 29, May 15, 1990 and at 55 FR 18230, May 1, 1990.
- ☐ 2. This application does not contain, as a separate part of the disclosure on paper copy, a "Sequence Listing" as required by 37 CFR 1.821(c).
- ☐ 3. A copy of the "Sequence Listing" in computer readable form has not been submitted as required by 37 CFR 1.821(e).
- ☐ 4. A copy of the "Sequence Listing" in computer readable form has been submitted. However, the content of the computer readable form does not comply with the requirements of 37 CFR 1.822 and/or 1.823, as indicated on the attached copy of the marked-up "Raw Sequence Listing."
- ☐ 5. The computer readable form that has been filed with this application has been found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. A substitute computer readable form must be submitted as required by 37 CFR 1.825(d).
- ☐ 6. The paper copy of the "Sequence Listing" is not the same as the computer readable form of the "Sequence Listing" as required by 37 CFR 1.821(e).
- ☐ 7.

Other: _____

Applicant must provide:

- ☐ An initial or substitute computer readable form (CRF) copy of the "Sequence Listing"
- ☒ An initial or substitute paper copy of the "Sequence Listing", as well as an amendment directing its entry into the specification
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